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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): James P. Nakas et al.

Attorney Docket No.: R1345-210US

Serial No.: 10/528923

Group Art Unit: Unknown

Filed: 03/23/2005

Examiner: Unknown

Title: BIOCONVERSION OF XYLAN AND
LEVULINIC ACID TO
BIODEGRADABLE
THERMOPLASTICS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

This Information Disclosure Statement is submitted:

- ☒ under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of international application; or before mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97(c) together with either a:
☐ Statement under 37 CFR 1.97(e), or
☐ a \$180.00 fee under 37 CFR 1.17(p), or
(After the CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97(d) together with a:
☐ Statement under 37 CFR 1.97(e), and
☐ a \$180.00 petition fee set forth in 37 CFR 1.17(p).
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☒ Applicant(s) submit herewith Form PTO 1449-Information Disclosure Citation together with copies, of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

The relevance of the attached references is that this is the closest art of which Applicant is aware. Applicant submits that the above references taken alone or in combination neither anticipate nor render obvious the present invention. Consideration of the foregoing in relation to this application is respectfully requested. It is requested that the information disclosed herein be made of record in this application.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or the correspondence is being facsimile transmitted to the USPTO, on September 14, 2005.

Typed Name: Jennifer L. Shafer

Signature:

Respectfully submitted,

Stephen F. Swinton, Jr., Reg. No. 53661
Attorney/Agent for Applicant(s)

Date: September 14, 2005

Telephone No.: (518) 449-0044

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Substitute for form 1449B/PTO			Complete if Known		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Application Number	10/528,923	
			Filing Date	03-23-2005	
			First Named Inventor	James P. Nakas et al.	
			Group Art Unit	Unknown	
			Examiner Name	Unknown	
Sheet	2	of	3	Attorney Docket Number	R1345-210US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Aldor et al., "Metabolic Engineering of Poly(3-hydroxybutyrate-co-3-hydroxyvalerate) Composition in Recombinant <i>Salmonella enterica</i> Serovar Typhimurium," Biotechnology and Bioengineering, Vol. 76, Issue 2, pp. 108 – 114, Sept. 2001.	
		Bertrand et al., "Biosynthesis of Poly-β-Hydroxyalkanoates from Pentoses by <i>Psuedomonas pseudoflava</i> ," Applied and Environmental Microbiology, Vol. 56, No. 10, pp. 3133 – 3138, Oct. 1990.	
		Bozell et al., "Production of Levulinic Acid and Use as a Platform Chemical for Derived Products," Resources, Conservation and Recycling, vol. 28, pp. 227 – 239, 2000.	
		Choi et al., "Cloning of the <i>Alcaligenes latus</i> Polyhydroxyalkanoate Biosynthesis Genes and Use of These Genes for Enhanced Production of Poly(3-hydroxybutyrate) in <i>Escherichia coli</i> ," Applied and Environmental Microbiology, vol. 64, no. 12, pp. 4897 – 4903, Dec. 1998.	
		Choi et al., "High-Level Production of Poly(3-Hydroxybutyrate-co-3-Hydroxyvalerate) by Fed-Batch Culture of Recombinant <i>Escherichia coli</i> ," Applied and Environmental Microbiology, vol. 65, no. 10, pp. 4363 – 4368, Oct. 1999.	
		Chung et al., "Effect of Levulinic Acid on the Production of Poly(3-hydroxybutyrate-co-3-hydroxyvalerate) by <i>Ralstonia eutropha</i> KHB-8862," Journal of Microbiology, vol. 39., no. 1, pp. 79 – 82, March 2001.	
		Imam et al., "Degradation of Starch-Poly(β-Hydroxybutyrate-Co-β-Hydroxyvalerate) Bioplastic in Tropical Coastal Waters," Applied and Environmental Microbiology, vol. 65, no. 2, pp. 431 – 437, Feb. 1999.	
		Jang et al., "Effect of Levulinic Acid on Cell Growth and Poly-β-Hydroxyalkanoate Production by <i>Alcaligenes</i> SP. SH-69," Biotechnology Letters, vol. 18, no. 2, pp. 219 – 224, 1996.	
		Kim et al., "Production of poly(3-hydroxybutyric-co-3-hydroxyvaleric acid) by fed-batch culture of <i>Alcaligenes eutrophus</i> with substrate control using on-line glucose analyzer," Enzyme Microb. Technol., vol. 16, pp. 556 – 561, July 1994.	
		S. Y. Lee, "Poly(3-hydroxybutyrate) production from xylose by recombinant <i>Escherichia coli</i> ," Bioprocess Engineering, vol. 18, 397 – 399, 1998.	
		Madison et al., "Metabolic Engineering of Poly(3-Hydroxyalkanoates): From DNA to Plastic," Microbiology and Molecular Biology Reviews, vol. 63, no. 1, pp. 21 – 53, Mar. 1999.	

Examiner Signature		Date Considered	
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1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

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		Martinez et al., "Detoxification of Dilute Acid Hydrolysates of Lignocellulose with Lime," Biotechnol. Prog., vol. 17, pp. 287 – 293, 2001.	
		J. D. McMillan, "Conversion of Hemicellulose Hydrolyzates to Ethanol," American Chemical Society, pp. 411 – 437, 1994.	
		Mussatto et al., "Hydrolysate detoxification with activated charcoal for xylitol production by <i>Candida guilliermondii</i> ," Biotechnology Letters, vol. 23, pp. 1681 – 1684, 2001.	
		W. J. Page, "Waste Sources for Polyhydroxyalkanoate Production," National Research Council of Canada, Ottawa, Ontario, pp. 56 – 66, 1996.	
		Parajó et al., "Biotechnological Production of Xylitol. Part 3: Operation in Culture Media Made from Lignocellulose Hydrolysates," Bioresource Technology, vol. 66, pp. 25 – 40, 1998.	
		Saracoğlu et al., "Comparison of different pretreatments in ethanol fermentation using corn cob hemicellulosic hydrolysate with <i>Pichia stipitis</i> and <i>Candida Shehatae</i> ," Biotechnology Letters, vol. 22, pp. 855 – 858, 2000.	
		Ramsay et al., "Hemicellulose as a potential substrate for production of poly(β-hydroxyalkanoates)," Can. J. Microbiol., vol. 41(Suppl.1), pp. 262 – 266, 1995.	
		Schmack et al., "Biotechnological production and characterization of polyesters containing 4-hydroxyvaleric acid and medium-chain-length hydroxyalkanoic acids," Macromolecules, vol. 31, no. 3, pp. 644 – 649, 1998.	
		Schubert et al., "Cloning of the <i>Alcaligenes eutrophus</i> Genes for Synthesis of Poly-β-Hydroxybutyric Acid (PHB) and Synthesis of PHB in <i>Escherichia coli</i> ," Journal of Bacteriology, vol. 170, no. 12, pp. 5837 – 5847, Dec. 1988.	

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